

CLAIMS:

1. A method of searching and displaying a structured document for an information processing system including a processor, a memory unit, a file unit and an input/output unit, comprising the steps of:

analyzing a structured document input thereto thereby to generate an analyzed structured document and storing said analyzed structured document in said file unit;

searching the document search indexes stored in said file unit according to a query input thereto, determining whether or not there is content information meeting said query, acquiring an analyzed structured document having the content information considered to meet said query, and acquiring the information on the position of said document meeting said query;

producing a document type definition (DTD) for highlighted display of the position of said document meeting said query; and

producing a structured document for display with information on the position of said document meeting the query and information for highlighted display added to a structured document based on the document type definition for display.

2. A method of searching and displaying a structured document according to Claim 1,

wherein when the conditions are met for the relative positions of occurrence of two query terms in a

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query, each query term constituting the query and the minimum character strings position including the two query terms are displayed in highlight with different display formats.

3. A method of searching and displaying a structured document according to Claim 1,

wherein each of a plurality of query terms constituting a query and the whole element including said query terms are displayed in highlight with different display formats.

4. A method of searching and displaying a structured document according to Claim 1,

wherein when a structured document for display with information added thereto for highlight display based on said document type definition for display is produced, the information for highlight display is added using a method specified in said query.

5. A method of searching and displaying a structured document according to Claim 1,

wherein the result of search is displayed in highlight using any one of a plurality of highlight display formats for each query term.

6. A method of searching and displaying a structured document according to Claim 5,

wherein the highlight display format for each query term is determined based on the information on the frequency of each query term.

7. A method of searching and displaying a

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structured document according to Claim 5,

wherein the display format of highlight display for each query term is determined based on the information on the weighting predetermined for each query term.

8. - A method of searching and displaying a structured document for an information processing system including a processor, a memory unit, a file unit and an input/output unit, comprising the steps of:

analyzing a structured document input thereto thereby to generate an analyzed structured document and storing said analyzed structured document in said file unit;

generating a normalized structured document for document search with predetermined no-search element information removed from said input structured document, generating the restoring information for restoring said removed element information and storing said normalized structured document in said file unit;

searching the normalized structured document stored in said file unit according to a query input thereto, determining whether or not there is a normalized structured document meeting said query, acquiring a normalized structured document considered to meet said query, and acquiring the information on the position of said document meeting said query;

producing a document type definition for highlighted display of the position of said document

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meeting said query; and

restoring a structured document having the removed element information based on said restoration information from the normalized structured document acquired by search, and producing a structured document for display with information on the position of said document meeting the query and information for highlighted display added to said restored structured document based on the document type definition for display.

9. A method of searching and displaying a structured document according to Claim 8,

wherein when the conditions are met for the relative positions of occurrence of two query terms in a query, each query term constituting the query and the minimum character strings position including the two query terms are displayed in highlight with different display formats.

10. A method of searching and displaying a structured document according to Claim 8,

wherein each of a plurality of query terms constituting a query and the whole element including said query terms are displayed in highlight with different display formats.

11. A method of searching and displaying a structured document according to Claim 8,

wherein when a structured document for display with information added thereto for highlight display

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based on said document type definition for display is produced, the information for highlight display is added using a method specified in said query.

12. A method of searching and displaying a structured document according to Claim 9,

wherein the result of search is displayed in highlight using any one of a plurality of highlight display formats for each query term.

13. A method of searching and displaying a structured document according to Claim 12,

wherein the highlight display format for each query term is determined based on the information on the frequency of each query term.

14. A method of searching and displaying a structured document according to Claim 12,

wherein the display format of highlight display for each query term is determined based on the information on the weighting predetermined for each query term.

15. A method of searching and displaying a structured document for an information processing system including a processor, a memory unit, a file unit and an input/output unit, comprising the steps:

analyzing a structured document input thereto thereby to generate an analyzed structured document and storing said analyzed structured document in said file unit;

acquiring content information in each element

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from said analyzed structured document to thereby generate a document search index and storing said index in said file unit;

searching the document search index stored in said file unit in accordance with a query input thereto, determining whether or not there is content information meeting said query, acquiring an analyzed structured document having the content information considered to meet said query, and acquiring the information on the position of said document meeting said query;

acquiring an input subelement to be displayed;

producing a document type definition for highlighted display of the position meeting said query in said subelement to be displayed; and

producing a structured document for subelement display with information on the position of said document meeting the query and information for highlighted display added to a structured document based on the document type definition for subelement display.

16. A method of searching and displaying a structured document according to Claim 15,

wherein when the conditions are met for the relative positions of occurrence of two query terms in a query, each query term constituting the query and the minimum character strings position including the two query terms are displayed in highlight with different display formats.

17. A method of searching and displaying a

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structured document according to Claim 15,

wherein each of a plurality of query terms constituting a query and the whole element including said query terms are displayed in highlight with different display formats.

18. - A method of searching and displaying a structured document according to Claim 15,

wherein in the case where a structured document for display with information added thereto for highlight display based on said document type definition for display is produced, the information for highlight display is added using a method specified in said query.

19. A method of searching and displaying a structured document according to Claim 15,

wherein the result of search is displayed in highlight using any one of a plurality of highlight display formats for each query term.

20. A method of searching and displaying a structured document according to Claim 19,

wherein the highlight display format for each query term is determined based on the information on the frequency of each query term.

21. A method of searching and displaying a structured document according to Claim 19,

wherein the display format of highlight display for each query term is determined based on the information on the weighting predetermined for each query term.

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22. A method of searching and displaying a structured document for an information processing system including a processor, a memory unit, a file unit and an input/output unit, comprising the steps of:

storing a structured document, as a plain text with a tag, conforming with a specific document type definition input thereto;

searching the plain text stored in said file unit according to an input query, determining whether or not there is a position meeting said query, acquiring the document having a position meeting said query as a plain text, and acquiring the information on a position of said document meeting the query; and

producing a structured document for display with information added thereto for highlighted display of the position of said document meeting the query based on said specific document type definition as a document type definition for display.

23. A method of searching and displaying a structured document according to Claim 22,

wherein it is determined whether or not a position meeting a query exists in the attribute information of a tag indicating a document element in a structured document, and

wherein when a position meeting said query exists in the attribute information of a tag, a character string including a character string of said position meeting said query is added to the content of

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said structured document, and a structured document for display is produced with information added thereto for highlighted display of said position meeting said query in said character string-based on said specific document type definition.

24.- A method of searching and displaying a structured document according to Claim 22,

wherein in searching the structured document stored as a plain text with a tag in said file unit in accordance with an input query, a character string constituting a predetermined specific tag is removed from the character string to be searched, the character strings before and after said character string constituting said specific tag are coupled to each other and searched, and information for highlighted display of said position meeting the query obtained by said search based on said specific document type definition is added to said position meeting the query thereby to produce a structured document for display.

25. A method of searching and displaying a structured document according to Claim 22,

wherein in searching a structured document stored in said file unit as a plain text according to an input query, it is determined whether or not a position meeting the query is interposed between a specific tag indicating the start of a predetermined document element and a specific tag indicating the end of said document element, and

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wherein when said position is so interposed, a character string including a character string of the position meeting said query is added to the content before the specific tag indicating the start of the document element or after the tag indicating the end of the document element, and a structured document for display is produced with information added thereto for highlighted display of the position meeting said query in said character string based on said specific document type definition.

26. A method of searching and displaying a structured document according to Claim 22,

wherein in producing a structured document for display with information added for highlighted display based on said document type definition for display, the information for highlighted display is added using a scheme specified in the query.

27. An apparatus for searching and displaying a structured document for an information processing system including a processor, a memory unit, a file unit and an input/output unit, comprising:

means for analyzing a structured document input thereto to thereby generate an analyzed structured document and storing said analyzed structured document in said file unit;

means for generating a normalized structured document for document search with predetermined no-search element information removed from said input

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means for generating the restoring information
for restoring said removed element information and
storing said restoring information in said file unit;

means for producing a document type definition
for highlighted display of the position of said document
meeting said query;

means for producing a structured document for display with information on the position of said document meeting the query and information for highlighted display added to said restored structured document based on the document type definition for display.

28. A computer-readable program for searching and displaying a structured document implemented by an information processing system including a processor, a

memory unit, a file unit and an input/output unit, said program comprising:

code means for analyzing a structured document input thereto thereby to generate an analyzed structured document and storing said analyzed structured document in said file unit;

code means for searching the document search indexes stored in said file unit according to a query input thereto, determining whether or not there is content information meeting said query, acquiring an analyzed structured document having the content information considered to meet said query, and acquiring the information on the position of said document meeting said query;

code means for producing a document type definition (DTD) for highlighted display of the position of said document meeting said query; and

code means for producing a structured document for display with information on the position of said document meeting the query and information for highlighted display added to a structured document based on the document type definition for display.

29. A search and display program for a structured document for an information processing system including a processor, a memory unit, a file unit and an input/output unit, wherein said processor comprises:

analyzing a structured document input thereto thereby to generate an analyzed structured document and

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restoring a structured document having the removed element information based on said restoration information from the normalized structured document acquired by search, and producing a structured document for display with information on the position of said document meeting the query and information for highlighted display added to said restored structured document based on the document type definition for display

30. A search and display program for a structured

on the document type definition for subelement display.

31. A computer-readable storage medium for storing a structured document search and display program implemented by an information processing system including a processor, a memory unit, a file unit and an input/output unit, wherein said program comprises:

code means for analyzing a structured document input thereto thereby to generate an analyzed structured document and storing said analyzed structured document in said file unit;

code means for searching the document search indexes stored in said file unit according to a query input thereto, determining whether or not there is content information meeting said query, acquiring an analyzed structured document having the content information considered to meet said query, and acquiring the information on the position of said document meeting said query;

code means for producing a document type definition (DTD) for highlighted display of the position of said document meeting said query; and

code means for producing a structured document for display with information on the position of said document meeting the query and information for highlighted display added to a structured document based on the document type definition for display.

32. A computer-readable storage medium for storing a structured document search and display program

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code means for analyzing a structured document
input thereto thereby to generate an analyzed structured
document and storing said analyzed structured document
in said file unit;

means for searching the normalized structured document stored in said file unit according to a query input thereto, determining whether or not there is a normalized structured document meeting said query, acquiring a normalized structured document considered to meet said query, and acquiring the information on the position of said document meeting said query;

code means for restoring a structured document having the removed element information based on said restoration information from the normalized structured document acquired by search, and producing a structured

document for display with information on the position of said document meeting the query and information for highlighted display added to said restored structured document based on the document type definition for display

33.- A computer-readable storage medium for storing a structured document search and display program implemented by an information processing system including a processor, a memory unit, a file unit and an input/output unit, wherein said program comprises:

code means for analyzing a structured document input thereto thereby to generate an analyzed structured document and storing said analyzed structured document in said file unit;

code means for acquiring content information in each element from said analyzed structured document thereby to generate a document search index and storing said index in said file unit;

code means for searching the document search index stored in said file unit according to a query input thereto, determining whether or not there is content information meeting said query, acquiring an analyzed structured document having the content information considered to meet said query, and acquiring the information on the position of said document meeting said query;

code means for acquiring an input subelement to be displayed;

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code means for producing a document type definition for highlighted display of the position meeting said query in said subelement to be displayed; and

code means for producing a structured document for subelement display with information on the position of said document meeting the query and information for highlighted display added to a structured document based on the document type definition for subelement display.

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